October 24, 1979

Mr. Daniel Martin, Esq.
Dwyer, Connel & Lisbona
427 Bloomfield Avenue
Montclair, New Jersey 07042

Dear Mr. Martin:

As you requested, attached is a copy of the report prepared by Mr. John Burger of Ecology and Environment, a contractor to the United States Environmental Protection Agency, subject "Report of Dye Study for the Purpose of Determining Applicability of 40 CFR 112 (SPCC Regulations) to Diamondhead Refining Co., Inc., Kearny, N.J.". As counsel for Newtown Refining and coordinator for spill response actions undertaken on October 19, 1979, please review and pass this report on to the appropriate Newtown Refining officials.

On Sunday, October 21, I visited the Diamond Head Oil Refining facility and observed the oil containment system which was constructed along the general guidelines I suggested and accepted by Mr. Jack Kroop, professional consulting engineer to the Newtown Refining Company who was also on site on October 19. I would, however, caution and advise that because of the depth of the containment area constructed, a fence be immediately installed around the containment area to prevent anyone from falling into the pit, a fact you recognized and also suggested.

This containment area must be continuously monitored, maintained and serviced to prevent any oil from reaching the navigable waters of the United States. Your professional engineer, Mr. Kroop, should be prepared to make additions and alterations to the device as may be necessary.

The containment device is only an emergency "band-aid" which is not intended for long-term use. Newtown Refining should proceed with all dispatch to clean up oil on their property and install, at appropriate locations, oil-water separators. I would also suggest that those recent oil spillages which I pointed out to you

MV

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10/23

on October 19, be cleaned and that you work closely with your leaseholder, Mr. Robert Mahler of Diamond Head Oil in eliminating future oil spills.

As a final matter, you requested a written letter documenting authority to construct the emergency containment device on the lands of the State of New Jersey. At my deposition of October 22, 1979, such permission was certified to by Mr. Tom Germine, Deputy Attorney General. Implicit in this permission was an understanding that the oil removal actions are of an emergency nature, and not designed to be long term.

Sincerely yours,

Michael V. Polito
Emergency Response & Inspection Branch

Attachment

cc: R. Tisch
T. Germine
R. Mahler

MVP
10/23

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Sincerely yours,

Michael V. Polito
Emergency Response & Inspection Branch

Attachment

cc: R. Tisch
T. Gargine
R. Mahler

ecology and environment, inc.

REDFIELD OFFICE BUILDING, 2ND FLOOR, 295 PIERSON AVENUE, EDISON, NEW JERSEY 08817, TEL. 201-494-5871

International Specialists in the Environmental Sciences

Date: October 3, 1979

Subject: Report of dye study for purpose of determining applicability of 40 CFR 112 (SPCC Regulations) to Diamondhead Refining Co., Inc., Kearny, New Jersey

From: John R. Burger

To: Michael V. Polito, Chemist
Emergency Response and Inspection Branch

THRU: Fred N. Rubel, Chief
Emergency Response and Inspection Branch

The following report summarizes the result of observations made and a dye study performed using Rhodamine B Dye at the above subject site between 1400 and 1615 hrs on Monday, October 1, 1979.

Purpose of Study

Our joint site inspection and survey on September 10th determined that product spillage or stormwater runoff originating on the Diamondhead Refining Co., Inc. (the Company) site would not be retained. Potential for these flows to enter a low point on state property adjacent to a new access ramp leading to westbound Interstate 280 and catch basins north of the Company along Harrison Street was evident in the local topography.

Conversations with local supervisory personnel involved with the Rt. 280 Interchange construction determined that catch basins 1, 2, 3, and 4 (See "Site Plan") were to ultimately discharge into a swale to be constructed south of catch basin 1 and parallel to the 280 access ramp. However, interim drainage had been provided in the form of an open-outfall buried corrugated steel pipe from catch basin 2 to where catch basin 4 is presently located. Although the drainage system was designed and constructed to flow from catch basin's 4 and 3 into 2 and then to 1, without the swale the entire system becomes surcharged. This was reported to result in a back-flow of runoff against the slope of the sewer, and a discharge into an unnamed surface drainage tributary of Frank Creek (See "Location Map").

At the time of the investigation on September 10th, a viscous amber liquid was observed in the depression identified on both the "Site Plan" and "Enlarged Site Plan" as the point of dye introduction on

October 1st.

The construction drawings for the 280 Interchange indicated a sewer connection between this approximate location and catch basin 1.

In view of the preceding evidence, a dye study and observation of stormwater runoff during a period of heavy precipitation was determined by the investigators to be appropriate. The information obtained should establish the following:

1. The requirement to prepare and implement an SPCC plan at the Diamondhead site.

2. The requirement to apply for an NPDES permit for the Diamondhead site.

The requirement for an SPCC plan would be based on determining whether or not the site location "could reasonably be expected to discharge oil in harmful quantities . . . into or upon the navigable waters of the United States or adjoining shorelines" (40 CFR 112.1 (b)). The requirement for an NPDES permit (Section 402, FWPCA) would initially be determined by observation of site runoff for visible oil and grease entering storm sewer catch basin(s) or flowing directly into surface waters.

Materials Utilized in Study

1. Rhodamine B Dye (Produces iridescent magenta to iridescent pink color)

2. Rubber gloves

3. 8 oz. wax-coated drinking cup with plastic cover and pull string

4. Polaroid SX-70A camera and film

5. Notebook and ancillary supplies

Dye-Study Procedure and Observations

At 1400 hrs, the undersigned arrived at the site and observed runoff from the Diamondhead site flowing over the curb along Harrison Street. The ponded water elevation and appearance along the south side of Harrison was noted as were conditions along the 280 access ramp east of the Company site.

Approximately 4 fluid oz. of Rhodamine B Dye was introduced into the flooded depression at 1415 hrs (See Site Plans) by filling a paper cup with dye and stones (for weight), attaching plastic twine to the plastic cup cap, and pitching the container into the water. The cover was jerked free when the container was submerged, and the contents were mixed by throwing in large (20-40 lb) stones and broken concrete fragments. The initial dosage was observed and local conditions were photographed (See Enlarged Site Plan). Observation at catch basin 1 was maintained for 20 minutes, with 2

interim checks at catch basin 2, 3 and 4 over that period. By 1440 hrs, the magenta-pink color was so attenuated (see photo 3) that an additional 8 oz. of dye was added and mixed using a broken surveyor's stake. This additional dye produced an intense magenta-pink color in the ponded water. This color was observed throughout the remaining period of the study.

Between 1440 hrs and 1615 hrs, catch basins 1, 2, 3, and 4 were inspected on a 15-minute circuit.

The results of all of these observations are reported in the following section.

Results of Field Observations and Dye Study

A. Field Observations

1. Rainfall was moderate to heavy during all but 15 minutes of the study.

2. Oil-contaminated stormwater runoff was observed flowing from the Company property over the Harrison Street curbing, accumulating around flooded catch basin 5 (See Site Plans). This concentration of oil produced an oily surface froth similar in appearance to that observed around and eminating from flooded catch basin 1. Catch basin 5 remained flooded throughout the study.

3. Liquid elevation in catch basin 2 was approximately 6" below the grading, with the surface coated with an amber, oily liquid similar to that observed in the depression on September 10th.

4. Liquid level in catch basin 3 was similar in elevation and surface appearance to catch basin 2.

5. Catch basin 4 was overflowing at the rate of 500 to 1,000 gpm throughout the study. Oil-soaked solids were continuously observed to be carried out this discharge and directly into the marsh area's surface water drainage. An oily sheen was continuously visible in the receiving water.

6. Catch basin 1 was flooded throughout the study, with a thick (1/16") layer of grey, frothy oil-like material discharging from the catch basin during periods of slightly fluctuating water depth. Photos taken at the site show this material being discharged from catch basin 1 (Photos 1 and 2), a close-up view of this material (Photo 4), and the general flooded condition (Photo 6).

7. Oil-contaminated stormwater runoff was observed flowing off the northeast corner of Company property and both into the dye-test area depression (See Site Plans) and behind and over

the Rt. 280 access ramp curbing onto the flooded roadway (See Photos 1 and 6).

8. Runoff from the mounded earth fill south of catch basin 1 and between the ramp curbing and the fill area was observed to flow into a depression adjacent to the dye-study site (See Site Plans).

9. Combined flow rates from (7) and (8) above were estimated at 150-200 ± gpm throughout the study. The liquid level depths in the depression and around catch basin 1 appeared to be identical. During the study period, the depth at both of these locations varied (simultaneously) by less than 1 inch, despite continuous inflows of > 150 gpm with no visible surface discharge or outlet (surface area of the combined depressions was approximately 400 ft^2).

10. The edge of the marsh area north of the road construction site (parallel to Rt. 508) was flooded to a depth of 4-6", with the surface coated with a light amber film of weathered oily material.

B. Dye Study

Time	Action	Catch Basin Location 1	2	3	4
1400 hrs	(On-scene)	0	0	0	0
1415	4 oz. dye "in"	0	0	0	0
1430	observation:	-	-	-	-
1440	8 oz. dye "in"	-	-	-	-
1445	observation:	-	-	-	-
1500	observation:	-	-	-	-
1515	observation:	-	-	-	+ (?)[1]
1530	observation:	-	-	-	+[2]
1545	observation:	-	-	-	+[3]
1600	observation:	-	-	-	+[3]
1615	observation:	-	-	-	+[3]
1620	(Departed)	0	0	0	0

(0) = no observation

(+) = dye observed

(-) = dye <u>not</u> observed

1 = pinkish cast in froth first suspected

2 = magenta/maroon froth observed in eddy currents, reddish cast to discharge (originally medium brown with heavy sediment load)

3 = definite reddish cast to froth and discharge, attached organic debris around outfall stained magenta or pink

Discussion/Conclusions

1. The Company property presently discharges stormwater runoff to surface waters both directly via Harrison Street catch basins and indirectly through the subject depression. (The depression is apparently linked via sub-surface piping to the catch basin system discussed in this report.)

2. Uncontained runoff from the Company property was contaminated with free-floating visible oil and an oily sheen.

Summary

The Company requires both an SPCC plan for acute oil spill prevention and containment, and an NPDES permit (i.e., Industrial Wastewater Treatment System) for a chronic, on-going oil-contaminated runoff problem.

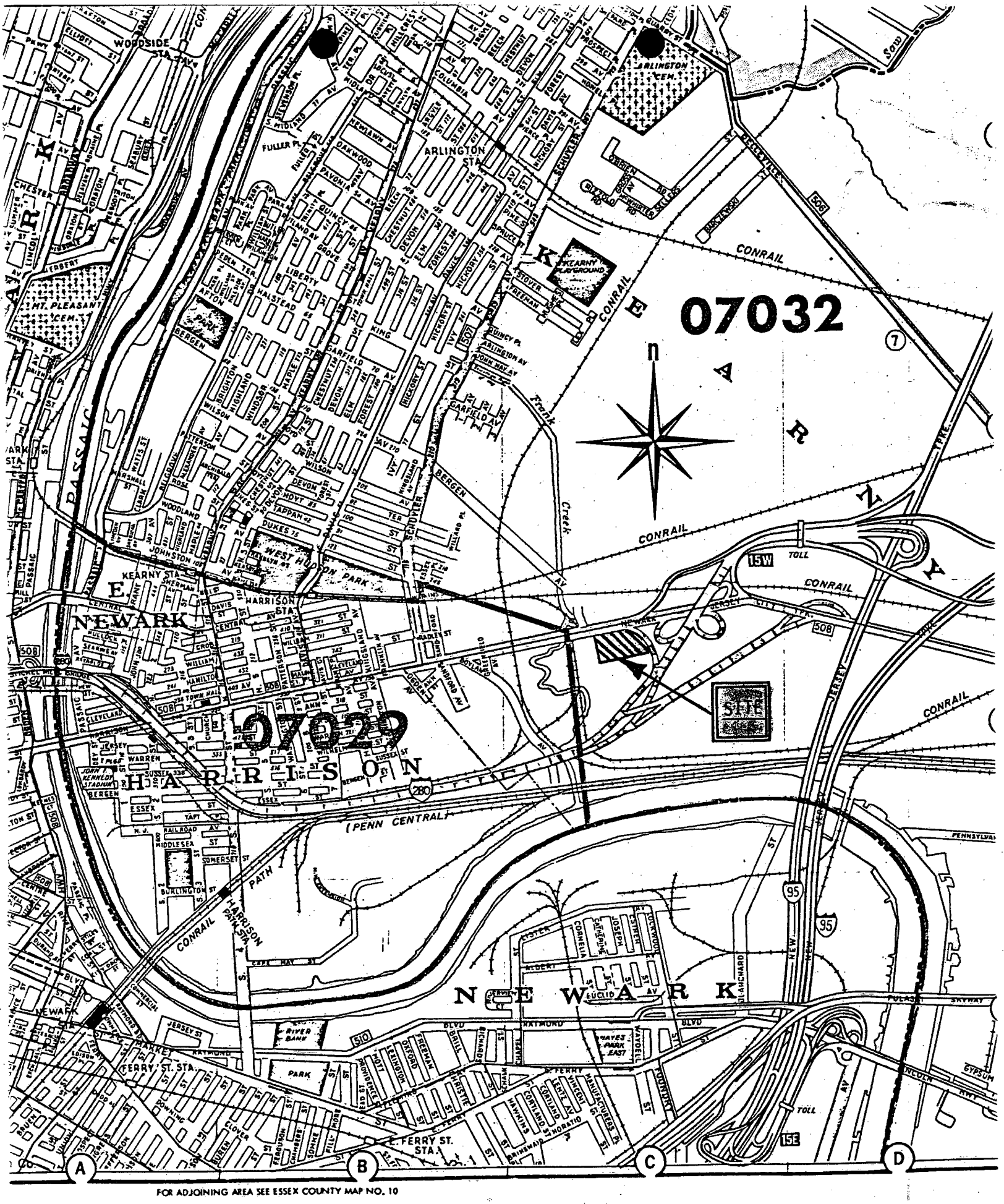
This report concludes the study, and is forwarded for your review and appropriate action. Please do not hesitate to call if any questions arise.

Very truly yours,

John R. Burger

JRB/djs

Enclosures



LOCATION MAP

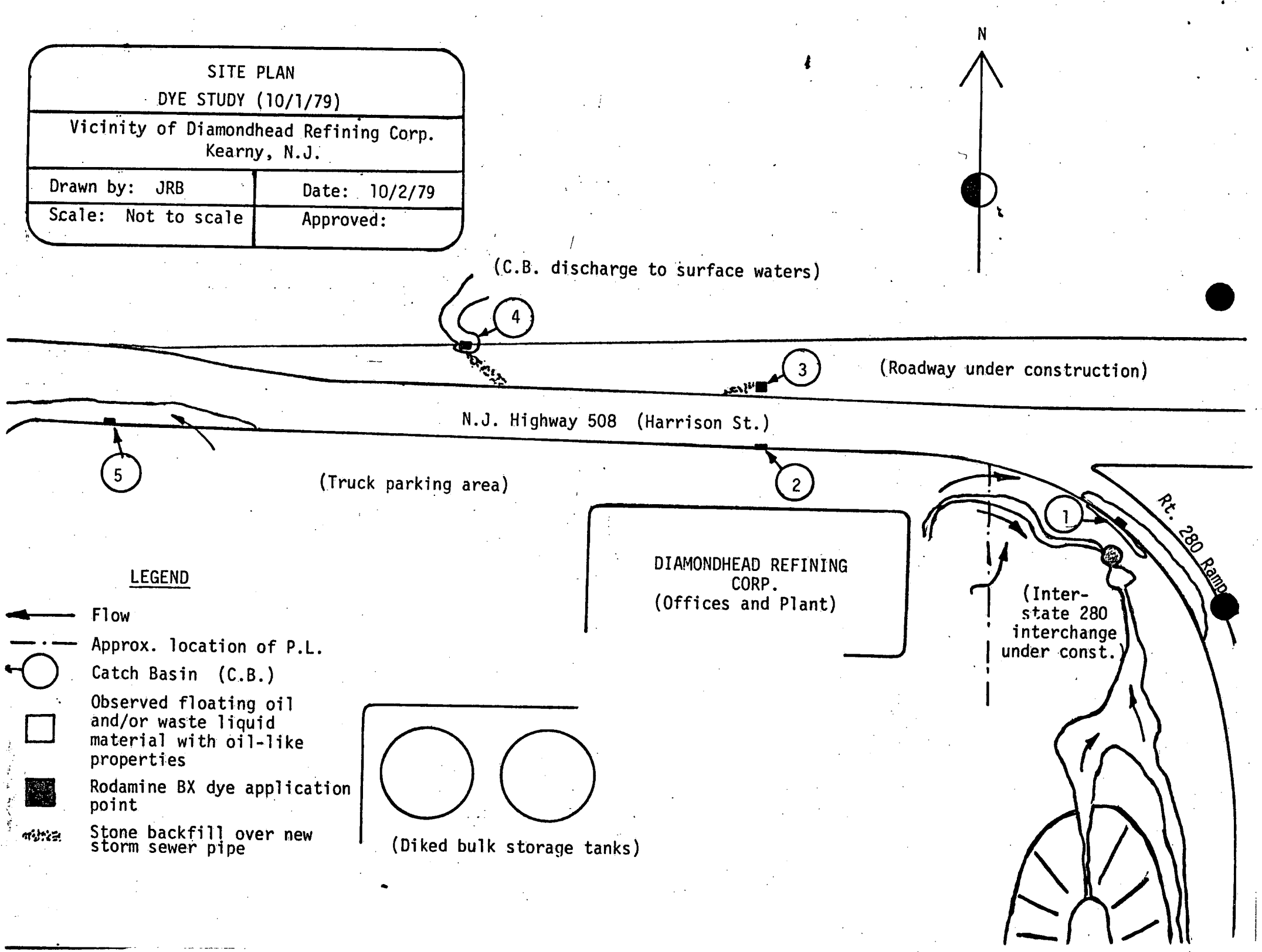
DYE STUDY (10/1/79)
Vicinity of Diamondhead Refining Corp.
Kearny, N.J.

SITE PLAN

DYE STUDY (10/1/79)

Vicinity of Diamondhead Refining Corp.
Kearny, N.J.

Drawn by: JRB	Date: 10/2/79
Scale: Not to scale	Approved:



ENLARGED SITE PLAN DYE STUDY (10/1/79)	
Vicinity of Diamondhead Refining Corp. Kearny, N.J.	
Drawn By: JRB	Date: 10/2/79
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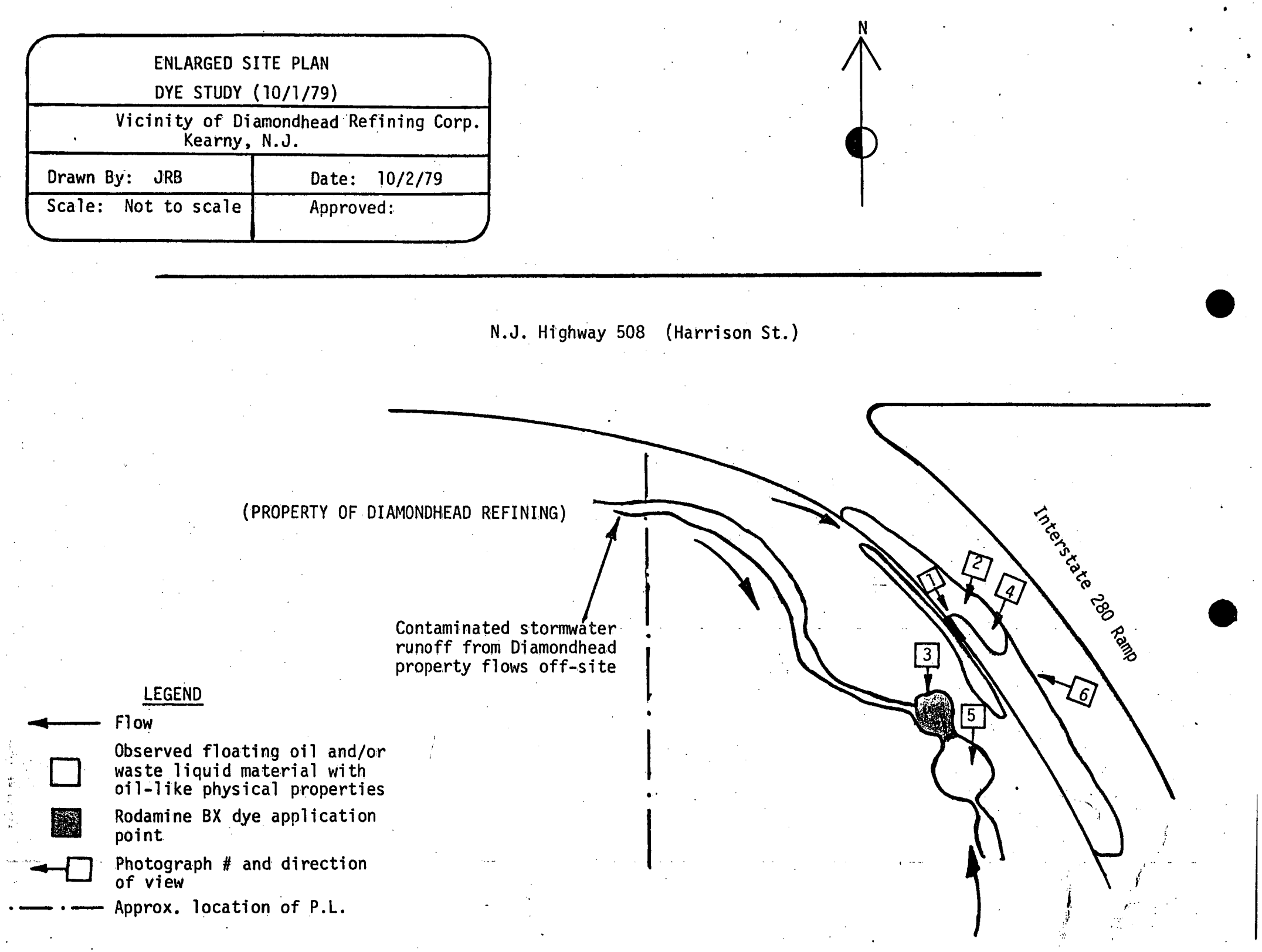

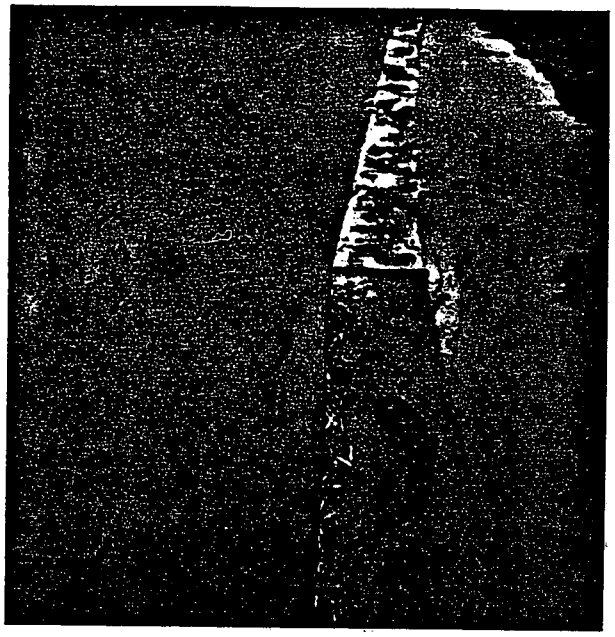

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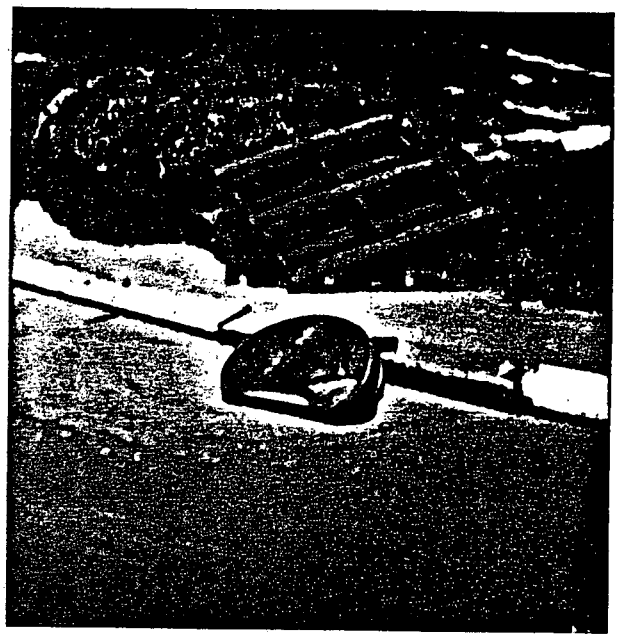

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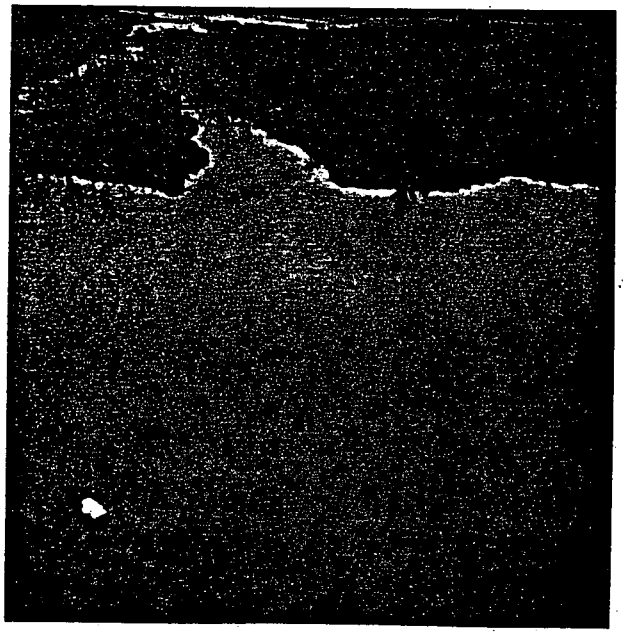

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